



Docket No.: M4065.0965/P965
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Jin Li et al.

Application No.: 10/681,308

Confirmation No.: 7977

Filed: October 9, 2003

Art Unit: 2873

For: METHOD AND APPARATUS FOR
BALANCING COLOR RESPONSE OF
IMAGERS

Examiner: A. M. Harrington

REQUEST FOR RECONSIDERATION

MS AF Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The application has been carefully reviewed in light of the rejection dated May 3, 2006. Claims 1-9, 11-27, 30-42, 44-45, and 56-62 are pending in the application. Applicants reserve the right to pursue the original claims and other claims in this and other applications.

Claims 1-3, 6-7, 11-18, 20-21, 24, 30-31, 33-39, 44-45, and 56-62 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Foster (US 6,643,386). This rejection is respectfully traversed. Although the reference appears as a 35 U.S.C. § 102(b) rejection, Applicants believe it should be a 35 U.S.C. § 102(e) rejection, since the filing date of this application is prior to the issuance of Foster, and Applicants will treat it accordingly.

Claims 1, 6, 12, 17, 24, and 36 recite, *inter alia*, “a first set of micro-lenses comprising a plurality of first micro-lenses ...; and a second set of micro-lenses comprising a plurality of second micro-lenses ..., [which] at least abut without overlapping, ... and wherein said first and second sets of micro-lenses are regularly distributed throughout said micro-lens array in accordance with a predetermined color pattern for image capture.” (emphasis added). Claim 6 further recites “a third set of micro-lenses comprising a plurality of third micro-lenses,” which is also regularly distributed throughout the micro-lens array in accordance with a predetermined color pattern for image capture. Foster does not disclose these limitations.

To the contrary, Foster discloses a system of creating a watermark over part of an image by selectively distorting part of the microlens array. “A color filter pattern is altered or deviated so as to differ from the normal color pattern.” Col. 3, ln. 64-66 (emphasis added). Foster discloses “alter[ing] the pattern of the microlenses 38 by changing the color of selected ones of the microlenses.” Col. 5, ln. 50-53 (emphasis added). Foster further discloses “alter[ing] the pattern of the microlenses 38 by changing the shape of selected ones of the microlenses.” Col. 6, ln. 3-4 (emphasis added).

Applicant respectfully submits that Foster does not disclose first and second sets of micro-lenses regularly distributed throughout said micro-lens array in accordance with a predetermined color pattern for image capture combined with first and second sets of microlenses which at least abut without overlapping as recited in claims 1, 12, 17, 24, and 36, or first, second and third sets of micro-lenses regularly distributed throughout said micro-lens array in accordance with a predetermined color pattern for image capture as recited in claim 6. Foster discloses only distorting an image, not capturing the image. Although Foster discusses as prior art using a “known color space standard” (Col. 3, ln. 44), the fundamental teaching of the invention disclosed in Foster

is to “differ from the normal color pattern” (Col. 3, ln. 65-66). Therefore, Applicants respectfully submit that Foster does not disclose, teach, or suggest the use of a predetermined color pattern for image capture combined with first and second sets of microlenses which at least abut without overlapping.

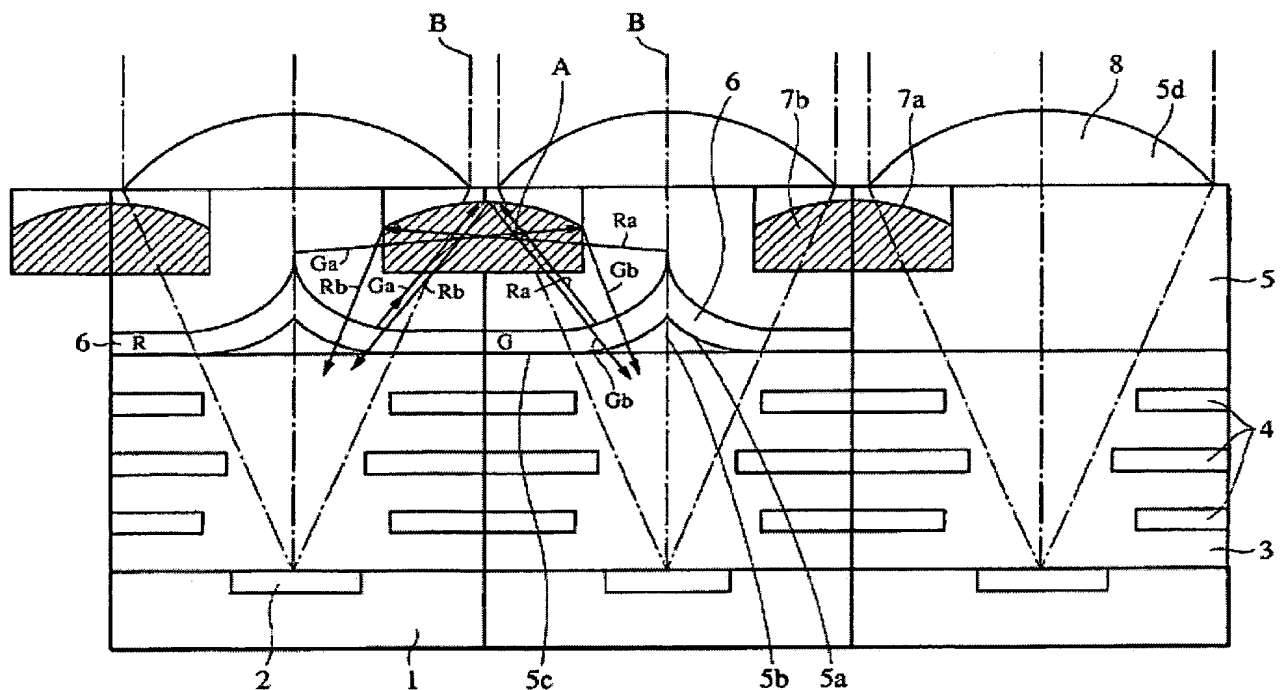
Since Foster does not disclose all the limitations of claims 1, 6, 12, 17, 24, and 36, claims 1, 6, 12, 17, 24, and 36 are not anticipated by Foster. Claims 2-3, 7-11, 13-16, 18, 20-21, 30-31, 33-35, 44-45, and 56 depend, respectively, from claims 1, 6, 12, 17, 24, and 36 and are patentable at least for the reasons mentioned above. Applicants respectfully request that the 35 U.S.C. § 102(b) rejection of claims 1-3, 6-7, 11-18, 20-21, 24, 30-31, 33-39, 44-45, and 56 be withdrawn.

Claims 1, 17, 24, and 36 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Tsuboi (US 2003/0063210). This rejection is respectfully traversed.

Claims 1 recites, *inter alia*, “at least one of said ... first micro-lenses at least abuts without overlapping at least one of said ... second micro-lenses” (emphasis added). Claim 17 recites, *inter alia*, “a micro-lens array ... substantially space-less between at least one of [a] plurality of first micro-lenses and at least one of [a] plurality of second micro-lenses” (emphasis added). Claim 24 recites, *inter alia*, “a micro-lens array, comprising: a first plurality of first micro-lenses ... and a second plurality of second micro-lenses ... wherein at least one of said plurality of first micro-lenses at least abuts without overlapping at least one of said plurality of second micro-lenses” (emphasis added). Claim 36 recites, *inter alia*, “said second micro-lenses contact without overlapping said first micro-lenses” (emphasis added). Tsuboi does not disclose these limitations.

To the contrary, Tsuboi discloses in FIG. 2 (reproduced below) that the microlenses 8 do not abut, overlap, or contact each other. Tsuboi further discloses that "reflectors 7 ... are placed at each of the four corners of the microlenses 8, ... at the places where the microlenses 8 are not formed when viewed from the light incident direction. ... [T]he reflectors 7 are effectively disposed in optically dead spaces of the solid-state imaging sensor." Paragraph [0037] (emphasis added). Although the Office Action (p. 9) refers to FIG. 1, that figure is not detailed enough to show the structure of Tsuboi as illustrated in FIG. 2. Applicants respectfully submit that Tsuboi does not disclose, teach, or suggest the micro-lenses being substantially space-less, in contact, or abutting as recited in claims 1, 17, 24, and 36. Since Tsuboi does not disclose all the limitations of claims 1, 17, 24, and 36, claims 1, 17, 24, and 36 are not anticipated by Tsuboi. Applicants respectfully request that the 35 U.S.C. § 102(e) rejection of claims 1, 17, 24, and 36 be withdrawn.

Tsuboi FIG. 2



Claims 8-9, 22-23, 25-27, and 40-42 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Foster in view of Li. This rejection is respectfully traversed. Claims 8-9, 22-23, 25-27, and 40-42 depend, respectively, from claims 6, 17, 24, and 36, and are patentable at least for the reasons mentioned above. Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of claims 8-9, 22-23, 25-27, and 40-42 be withdrawn.

Claim 19 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Foster in view of Hiroki (JP 2000-260968). This rejection is respectfully traversed. Claim 19 depends from claim 17 and is patentable at least for the reasons mentioned above. Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of claim 19 be withdrawn.

Claims 24-27 and 30-33 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hokari (US 5,493,143) in view of Tsuboi. This rejection is respectfully traversed. In order to establish a *prima facie* case of obviousness “the prior art reference (or references when combined) must teach or suggest all the claim limitations.” M.P.E.P. §2142. Neither Hokari nor Tsuboi, even when considered in combination, teach or suggest all limitations of independent claim 24.

Claim 24 recites, *inter alia*, “a micro-lens array, comprising: a first plurality of first micro-lenses ... and a second plurality of second micro-lenses ... wherein at least one of said plurality of first micro-lenses at least abuts without overlapping at least one of said plurality of second micro-lenses” (emphasis added). Hokari does not disclose such a limitation.

To the contrary, Hokari discloses in FIG. 9 the array of micro-lenses 9R, 9G, and 9B having an appreciable distance between them. Hokari does not disclose the micro-

lenses being substantially space-less or abutting and recited in claim 24. As discussed above, Tsuboi also does not teach or suggest this limitation. Tsuboi teaches in FIG. 2 that the microlenses 8 do not abut, overlap, or contact each other. Tsuboi further teaches that "reflectors 7 ... are placed at each of the four corners of the microlenses 8, ... at the places where the microlenses 8 are not formed when viewed from the light incident direction." Paragraph [0037] (emphasis added). Thus, Tsuboi does not remedy the deficiency of Hokari. Since Hokari and Tsuboi do not teach or suggest all of the limitations of claim 24, claim 24 and dependent claims 25-27 and 30-33 are not obvious over the cited references. Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of claims 24-27 and 30-33 be withdrawn.

In view of the above amendment, Applicants believe the pending application is in condition for allowance.

Dated: June ²⁷~~30~~, 2006

Respectfully submitted,

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